

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 2

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Currently amended) A method for inactivating microbes in a platelet composition, the method comprising illuminating the ~~biological fluid~~ platelet composition with pulses of light having a pulse duration of less than 100 ms and having at least one wavelength within a range of 170 to 2600 nm and a fluence per pulse greater than about 0.001 J/cm², the illumination effective for inactivating microbes in the platelet composition and for decreasing platelet aggregation by not more than about 40%.

Claim 2. (Currently amended) The method of inactivating microbes of claim 1 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm wherein said method does not include the addition of a quenching agent, photoradiation sensitizer, or albumin and having a pulse duration of less than 100 ms.

Claim 3. (Original) The method of inactivating microbes of claim 1 wherein the platelet composition is selected from the group consisting of platelet rich plasma, leukocyte reduced platelets, non-leukocyte reduced platelets, synthetic platelet substitutes, artificial platelets, recombinant platelet products, and mixtures thereof.

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 3

Claim 4. (Currently amended) The method of inactivating microbes of claim 1 wherein the biological fluid is illuminated with an amount of light effective for providing a fluence per pulse ~~[[level]]~~ of about 0.1 to about 0.6 J/cm².

Claim 5. (Currently amended) A method of inactivating microbes in a platelet composition, the method comprising illuminating the platelet solution with pulses of light having a pulse duration of less than 100 ms and having at least one wavelength within a range of 170 to 2600 nm and a fluence per pulse ~~[[level]]~~ of about 0.05 to about 15 J/cm², the illumination effective for inactivating microbes in the platelet composition by at least about 2 logs, and for decreasing platelet aggregation by not more than about 40%.

Claim 6. (Currently amended) The method of inactivating microbes of claim 5 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm wherein said method does not include the addition of a quenching agent, photoradiation sensitizer, or albumin and having a pulse duration of less than about 100 ms.

Claim 7. (Original) The method of inactivating microbes of claim 5 wherein the platelet composition is selected from the group consisting of platelet rich plasma, leukocyte reduced platelets, non-leukocyte reduced platelets, synthetic platelet substitutes, artificial platelets, recombinant platelet products, and mixtures thereof.

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 4

Claim 8. (Currently amended) A method of inactivating microbes in a platelet composition, the method comprising:

flowing the platelet composition through a treatment chamber, the treatment chamber being light transmissive to at least 1% of a light treatment having at least one wavelength within a range of 170 to 2600 nm and the light treatment is provided in pulses of light having a pulse duration of less than 100 ms;

illuminating the platelet composition with the light as the platelet composition is flowed through the flexible treatment chamber;

inactivating microbes within the platelet composition, the method effective for inactivating microbes in the platelet composition by at least 2 logs, and for decreasing platelet aggregation by not more than about 40%.

Claim 9. (Cancelled)

Claim 10. (Currently amended) The method of inactivating microbes of claim 8 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm ~~and having a pulse duration of less than 100 ms.~~

Claim 11. (Currently amended) The method of inactivating microbes of claim 8 wherein at least 1% of the fluence of the pulses of light is ~~concentrated~~ at wavelengths within a range of 200 to 300 nm.

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 5

Claim 12. (Original) The method of inactivating microbes of claim 8 wherein the platelet composition is flowed through the treatment chamber at a constant flow rate.

Claim 13. (Original) The method of inactivating microbes of claim 8 wherein the biological fluid is selected from the group consisting of platelet rich plasma, leukocyte reduced platelets, non-leukocyte reduced platelets, synthetic platelet substitutes, artificial platelets, recombinant platelet products, and mixtures thereof.

Claim 14. (Original) A method for increasing shelf-life of a platelet composition, the method comprising:

illuminating the platelet composition with pulses of a light having at least one wavelength within a range of 170 to 2600 nm and a fluence greater than about 0.001 J/cm², and

repeating the illumination of the platelet composition every 6 hours, the illumination effective for inactivating microbes and for providing a zero net increase of microbial counts in the platelet composition,

wherein platelet aggregation is not decreased by more than about 40%.

Claim 15. (Original) The method of inactivating microbes of claim 14 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm and having a pulse duration of less than 100 ms.

Claim 16. (Currently amended) The method of inactivating microbes of claim 14 wherein the platelet composition is

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 6

illuminated with an amount of light effective for providing a fluence per pulse ~~[[level]]~~ of about 0.1 to about 0.6 J/cm².

Claims 17-18 (Cancelled)

Claim 19. (Currently amended) A method for inactivating microbes in a platelet composition, the method comprising:

illuminating the platelet composition with pulses of a light having a pulse duration of less than 100 ms and having at least one wavelength within a range of 170 to 2600 nm and a fluence per pulse greater than about 0.001 J/cm², and

repeating the illumination of the platelet composition every 6 hours, the illumination effective for inactivating microbes and for providing a zero net increase of microbial counts in the platelet composition,

wherein platelet aggregation is not decreased by more than about 40%.

Claim 20. (Currently amended) The method of inactivating microbes of claim 19 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm and wherein said method does not include the addition of a quenching agent, photoradiation sensitizer, or albumin having a pulse duration of less than 100 ms.

Claim 21. (Currently amended) The method of inactivating microbes of claim 19 wherein the platelet composition is illuminated with an amount of light effective for providing a fluence per pulse ~~[[level]]~~ of about 0.1 to about 0.6 J/cm².

Claim 22. (New) A method for inactivating microbes in a platelet composition, the method comprising illuminating the

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 7

platelet composition with pulses of light having at least one wavelength within a range of 170 to 2600 nm and a fluence per pulse greater than about 0.001 J/cm², the illumination effective for inactivating microbes in the platelet composition and for decreasing platelet aggregation by not more than about 40%,

wherein said method does not include the addition of a quenching agent, photoradiation sensitizer, or albumin.

Claim 23. (New) The method of inactivating microbes of claim 22 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm and having a pulse duration of less than 100 ms.

Claim 24. (New) The method of inactivating microbes of claim 22 wherein the platelet composition is selected from the group consisting of platelet rich plasma, leukocyte reduced platelets, non-leukocyte reduced platelets, synthetic platelet substitutes, artificial platelets, recombinant platelet products, and mixtures thereof.

Claim 25. (New) The method of inactivating microbes of claim 22 wherein the platelet composition is illuminated with an amount of light effective for providing a fluence level of about 0.1 to about 0.6 J/cm².

Claim 26. (New) A method of inactivating microbes in a platelet composition, the method comprising illuminating the platelet solution with pulses of light having at least one wavelength within a range of 170 to 2600 nm and a fluence per pulse of light of about 0.05 to about 15 J/cm², the illumination effective for inactivating microbes in the platelet composition

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 8

by at least about 2 logs, and for decreasing platelet aggregation by not more than about 40%,

wherein said method does not include the addition of a quenching agent, photoradiation sensitizer, or albumin.

Claim 27. (New) The method of inactivating microbes of claim 26 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm and having a pulse duration of less than about 100 ms.

Claim 28. (New) The method of inactivating microbes of claim 26 wherein the platelet composition is selected from the group consisting of platelet rich plasma, leukocyte reduced platelets, non-leukocyte reduced platelets, synthetic platelet substitutes, artificial platelets, recombinant platelet products, and mixtures thereof.

Claim 29. (New) A method of inactivating microbes in a platelet composition, the method comprising:

flowing the platelet composition through a treatment chamber, the treatment chamber being light transmissive to at least 1% of a light treatment having at least one wavelength within a range of 170 to 2600 nm;

illuminating the platelet composition with the light as the platelet composition is flowed through the flexible treatment chamber;

inactivating microbes within the platelet composition, the method effective for inactivating microbes in the platelet composition by at least 2 logs, and for decreasing platelet aggregation by not more than about 40%,

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 9

wherein said method does not include the addition of a quenching agent, photoradiation sensitizer, or albumin.

Claim 30. (New) The method of inactivating microbes of claim 29 wherein the illuminating step comprises illuminating the platelet composition with pulses of light.

Claim 31. (New) The method of inactivating microbes of claim 29 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm and having a pulse duration of less than 100 ms.

Claim 32. (New) The method of inactivating microbes of claim 29 wherein at least 1% of the fluence of the pulses of light is concentrated at wavelengths within a range of 200 to 300 nm.

Claim 33. (New) The method of inactivating microbes of claim 29 wherein the platelet composition is flowed through the treatment chamber at a constant flow rate.

Claim 34. (New) The method of inactivating microbes of claim 29 wherein the platelet composition is selected from the group consisting of platelet rich plasma, leukocyte reduced platelets, non-leukocyte reduced platelets, synthetic platelet substitutes, artificial platelets, recombinant platelet products, and mixtures thereof.

Claim 35. (New) A method for increasing shelf-life of a platelet composition, the method comprising:

illuminating the platelet composition with pulses of a light having at least one wavelength within a range of 170 to

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 10

2600 nm and a fluence per pulse greater than about 0.001 J/cm²,
and

repeating the illumination of the platelet composition every 6 hours, the illumination effective for inactivating microbes and for providing a zero net increase of microbial counts in the platelet composition,

wherein platelet aggregation is not decreased by more than about 40%,

wherein said method does not include the addition of a quenching agent, photoradiation sensitizer, or albumin.

Claim 36. (New) The method of inactivating microbes of claim 35 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm and having a pulse duration of less than 100 ms.

Claim 37. (New) The method of inactivating microbes of claim 35 wherein the platelet composition is illuminated with an amount of light effective for providing a fluence per pulse of about 0.1 to about 0.6 J/cm².

Claim 38. (New) A method for inactivating an endogenous nucleic acid strand, the method comprising illuminating an organism containing the nucleic acid strand with at least one high-intensity, short duration pulse of incoherent polychromatic light in a broad spectrum,

wherein said method does not include the addition of a quenching agent, photoradiation sensitizer, or albumin.

Claim 39. (New) The method according to claim 38, wherein the nucleic acid to be inactivated is endogenous and contained as

10/067,731

Reply to Office Action of Oct. 14, 2003

Page 11

part of a mammalian cell, a eukaryotic cell, plant cell, biological tissue, tumor cells, chloroplast, cellular organelle, virus, bacteria, fungi, phage, transposon, spores, vaccine, antigen, prion, vector, or mixtures thereof.

Claim 40. (New) A method for inactivating microbes in a platelet composition, the method comprising:

illuminating the platelet composition with pulses of a light having at least one wavelength within a range of 170 to 2600 nm and a fluence per pulse greater than about 0.001 J/cm², and

repeating the illumination of the platelet composition every 6 hours, the illumination effective for inactivating microbes and for providing a zero net increase of microbial counts in the platelet composition, wherein platelet aggregation is not decreased by more than about 40%, and

wherein said method does not include the addition of a quenching agent, photoradiation sensitizer, or albumin.

Claim 41. (New) The method of inactivating microbes of claim 40 wherein the platelet composition is illuminated with pulses of light having wavelengths within a spectral range of at least between about 240 nm and about 280 nm and having a pulse duration of less than 100 ms.

Claim 42. (New) The method of inactivating microbes of claim 40 wherein the platelet composition is illuminated with an amount of light effective for providing a fluence per pulse of about 0.1 to about 0.6 J/cm².